

# **Audit**



# **Report**

OFFICE OF THE INSPECTOR GENERAL

**RESTORATION OF THE INDUSTRIAL BASE FOR  
AMMONIUM PERCHLORATE PRODUCTION**

Report No. 95-081

January 20, 1995

**Department of Defense**

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**INSPECTOR GENERAL**  
**DEPARTMENT OF DEFENSE**  
**400 ARMY NAVY DRIVE**  
**ARLINGTON, VIRGINIA 22202-2884**



Report No. 95-081

January 20, 1995

**MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE FOR**  
**ACQUISITION AND TECHNOLOGY**  
**UNDER SECRETARY OF DEFENSE (COMPTROLLER)**  
**DIRECTOR, DEFENSE PROCUREMENT**  
**ASSISTANT SECRETARY OF THE NAVY**  
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**ACCOUNTING SERVICE**  
**DIRECTOR, DEFENSE LOGISTICS AGENCY**  
**AUDITOR GENERAL, DEPARTMENT OF THE ARMY**

**SUBJECT:** Restoration of the Industrial Base for Ammonium  
Perchlorate Production (Project No. 4CA-5057)

## **Introduction**

We are providing this report for your information and use. The audit was performed to evaluate DoD surcharge payments for ammonium perchlorate (an essential ingredient used to produce the propellant for large solid-fuel rocket motors and numerous smaller conventional missiles).

## **Audit Results**

DoD payments for the restoration of the industrial base for ammonium perchlorate production were, in all material respects, appropriate and properly administered.

## **Objectives**

The primary audit objective was to determine whether DoD payments for the restoration of the industrial base for production of ammonium perchlorate were appropriate and properly administered. We also evaluated internal controls applicable to the primary audit objective.

## **Scope**

**Audit Methodology.** We reviewed the accounting treatment of ammonium perchlorate surcharge payments by purchasers at the prime contract and subcontract levels. Specifically, we reviewed \$10.7 million of the

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\$41.7 million of surcharges paid through DoD prime contracts to the two ammonium perchlorate producers from October 1989 through November 1991. We also reviewed ammonium perchlorate surcharge receipts, loan amortization, loan prepayments, and plant construction costs for Western Electrochemical Company, Las Vegas, Nevada.

**Use of Computer-Processed Data.** We relied on various contractor computer systems to provide lists of prime contracts and subcontracts that include ammonium perchlorate as a component of the price. We also relied on computer systems of producers of ammonium perchlorate to provide data on ammonium perchlorate sales. Because nothing came to our attention as a result of audit procedures that caused us to doubt the reliability of the computer-processed data, we did not validate the systems' processing procedures.

**Audit Period, Standards, and Locations.** This economy and efficiency audit was performed from August through November 1994 in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. Accordingly, we included tests of internal controls considered necessary. Enclosure 1 lists the organizations visited or contacted during the audit.

## **Internal Controls**

We evaluated DoD and contractor internal controls associated with the calculation, billing, payment, and accounting treatment of ammonium perchlorate surcharges by purchasers and producers of ammonium perchlorate. No material internal control weaknesses were identified. Therefore, we did not review the implementation of the DoD Internal Management Control Program as it applied to the primary audit objective.

## **Prior Audits and Other Reviews**

No other audit coverage of this specific topic has occurred in the last 5 years.

## **Background**

Ammonium perchlorate is an oxidizer that is used to produce the propellant for solid-fuel rocket motors and conventional missiles. On May 4, 1988, the United States lost nearly half its production capacity for ammonium perchlorate when explosions and fire destroyed the Henderson, Nevada, plant of Pacific Engineering and Production Company of Nevada. Additionally, Kerr-McGee Chemical Company, which was located 2 miles from the Pacific Engineering and Production Company plant and was the only other domestic producer of ammonium perchlorate, was faced with significant local opposition over the perceived potential danger associated with ammonium perchlorate production to the Henderson, Nevada, community. With national security concerns over the availability of ammonium perchlorate, DoD and the National Aeronautics and

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Space Administration formed the Air Force-sponsored Ammonium Perchlorate Advisory Group to restore the U.S. production capacity for ammonium perchlorate and to manage related issues.

## Discussion

On April 19, 1989, the National Aeronautics and Space Administration and DoD signed a memorandum of agreement to facilitate construction of a new ammonium perchlorate production facility to replace the destroyed Pacific Engineering and Production Company plant and to relocate and improve certain potentially hazardous functions at the Kerr-McGee Chemical Corporation plant. The National Aeronautics and Space Administration acted as the lead agency by providing investment guarantees through advance agreements with the two ammonium perchlorate producers: Western Electrochemical Company and Kerr-McGee Chemical Corporation. Western Electrochemical Company is a wholly owned subsidiary of American Pacific Corporation, the parent company of Pacific Engineering and Production Company. The National Aeronautics and Space Administration agreed to pay all loan amortization costs for ammonium perchlorate plant construction, relocation, and improvements. DoD obligations under its memorandum of agreement with the National Aeronautics and Space Administration included paying a 55-percent share of the loan amortization costs. The memorandum of agreement included the following investment guarantees.

- o Western Electrochemical Company and Kerr-McGee Chemical Corporation were allowed to add a surcharge to the per-pound price of ammonium perchlorate to repay the loan for the rebuilding of the Pacific Engineering and Production Company plant and for the relocation of and improvements to the Kerr-McGee Chemical Corporation plant.

- o The Government guaranteed an annual ammonium perchlorate purchase quantity for 7 years, through its prime contracts, of 20 million pounds from Western Electrochemical Company and 30 million pounds from Kerr-McGee Chemical Corporation. Western Electrochemical Company and Kerr-McGee Chemical Corporation would use the surcharge applied to those purchases to pay their plant investment costs and related interest.

- o In the event that ammonium perchlorate surcharge payments were not sufficient to pay the scheduled loan payments, DoD and the National Aeronautics and Space Administration would pay any ammonium perchlorate surcharge shortages.

**Ammonium Perchlorate Surcharge Payments.** Because the Government does not purchase ammonium perchlorate directly, the ammonium perchlorate surcharge payments were to be paid by DoD and the National Aeronautics and Space Administration as reimbursable costs to their prime contractors. The ammonium perchlorate was purchased from the ammonium perchlorate producers by subcontractors who paid the surcharge as part of their ammonium perchlorate purchases. The subcontractors would pass the ammonium perchlorate surcharge through to the prime contractors as a cost-reimbursable

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line item. The prime contractors, in turn, would bill the surcharge to the Government. In certain cases, the prime contractor purchased the ammonium perchlorate directly from the ammonium perchlorate producer without a subcontractor.

**Calculation of Ammonium Perchlorate Surcharge Amount.** The ammonium perchlorate surcharge payments to Western Electrochemical Company were based on the amortization of the \$92 million cost to build a new ammonium perchlorate production facility in Cedar City, Utah. The Defense Contract Audit Agency audited the \$92 million construction cost amount. Further, we performed tests to validate the plant construction costs. The \$92 million plant construction costs were adequately supported.

**Applying Indirect Costs and Profit to Surcharges.** According to certain advance agreements between DoD and certain contractors, the Government intended the ammonium perchlorate surcharge payments to be passed through to the Government without application of indirect costs or profit by any contract tier. Lockheed Missiles & Space Company, a major prime contractor, was not aware of the requirement to exclude indirect costs and profit from the ammonium perchlorate surcharges and was apparently under no contractual obligation to exclude the ammonium perchlorate surcharges from application of profit or indirect costs. Lockheed was not a party to any advance agreements regarding ammonium perchlorate surcharges, and none of its prime contracts contained any language that would preclude the prime contractor from applying indirect costs or profit to ammonium perchlorate surcharge amounts passed through by its subcontractors. However, the potential impact to DoD from indirect costs and profit related to ammonium perchlorate surcharges was immaterial.

**Termination of Ammonium Perchlorate Surcharge.** Because of declining requirements for ammonium perchlorate, on March 1, 1992, DoD paid \$54.9 million to the National Aeronautics and Space Administration to prepay the loan amortization and to conclude DoD obligations to pay ammonium perchlorate surcharges. The prepayment amount was calculated in accordance with DoD obligations under the DoD-National Aeronautics and Space Administration memorandum of agreement. Additionally, we verified that surcharge payments were concluded as of March 1, 1992.

## Conclusion

The elimination of one of the two domestic sources of ammonium perchlorate created a potential national security problem because of the Soviet military presence of the late 1980s. Thus, the expeditious restoration of domestic ammonium perchlorate production capacity required the Government to incur additional costs for ammonium perchlorate that, in light of the subsequent collapse of the Soviet Union, turned out to be unnecessary. However, in 1989, the Soviet threat was still real. Accordingly, we concluded that the actions taken and costs incurred by the Ammonium Perchlorate Advisory Group to restore the domestic ammonium perchlorate production capacity were appropriate. Further, based on our review of \$10.7 million of the \$41.7 million

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of surcharges paid to the two ammonium perchlorate producers, we concluded that payments made to restore the industrial base for ammonium perchlorate production were, in all material respects, properly administered.

### **Management Comments**

We provided a draft of this report to management on December 14, 1994. Because this report contains no findings and recommendations, written comments were not required, and none were received.

Courtesies extended to the audit staff are appreciated. If you have any questions about this audit, please contact Mr. Salvatore D. Guli, Audit Program Director, or Ms. Bobbie Sau Wan, Audit Project Manager, at (703) 604-9259 (DSN) 664-9259. The distribution of this report is listed in Enclosure 2. The audit team members are listed inside the back cover.

A handwritten signature in black ink that reads "Robert J. Lieberman". The signature is written in a cursive style with a large, stylized "R" and "L".

Robert J. Lieberman  
Assistant Inspector General  
for Auditing

Enclosures

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## **Organizations Visited or Contacted**

### **Office of the Secretary of Defense**

Under Secretary of Defense for Acquisition and Technology, Washington, DC  
Under Secretary of Defense (Comptroller), Washington, DC  
Director, Defense Procurement, Washington, DC

### **Department of the Army**

Auditor General, Department of the Army, Washington, DC

### **Department of the Navy**

Assistant Secretary of the Navy (Financial Management), Washington, DC

### **Department of the Air Force**

Assistant Secretary of the Air Force (Financial Management and Comptroller),  
Washington, DC

### **Other Defense Organizations**

Defense Contract Audit Agency, Alexandria, VA  
Resident Office, Lockheed Missiles & Space Company, Sunnyvale, CA  
Salt Lake Valley Branch Office, Salt Lake City, UT  
Suboffice, Hercules Aerospace Company, Magna, UT  
Defense Logistics Agency, Alexandria, VA  
Defense Contract Management Command, Alexandria, VA  
Defense Contract Management District West  
Defense Plant Representative Office, Lockheed Missiles & Space Company,  
Sunnyvale, CA  
Defense Plant Representative Office, Martin Marietta, Denver, CO  
Defense Contract Management Office, Chemical Systems Division, United  
Technologies Corporation, San Jose, CA

## **Organizations Visited or Contacted**

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### **Other Government Organization**

National Aeronautics and Space Administration, Washington, DC

### **Non-Government Organizations**

Kerr-McGee Chemical Corporation, Oklahoma City, OK

Lockheed Missiles & Space Company, Sunnyvale, CA

Thiokol Corporation, Ogden, UT

Chemical System Division, United Technologies Corporation, San Jose, CA

Western Electrochemical Company, Las Vegas, NV

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